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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,864	04/12/2004	Atsushi Matsumura	251297US2TTCRD	1850

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EXAMINER	
ROBERTS, JESSICA M	

ART UNIT	PAPER NUMBER
2621	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/821,864	MATSUMURA ET AL.	
	Examiner	Art Unit	
	JESSICA ROBERTS	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/01/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgment of Amendments

The amendment filed on overcomes the following rejection(s)/objection(s):

The rejection of claim 20 under 35 U.S.C 112 second paragraphs has been withdrawn in view of Applicants amendment.

The rejection of claim 20 under 35 U.S.C 101 has been withdrawn in view of Applicants amendment.

The rejection of claims 1-20 under non-statutory obviousness-type double patenting rejection has been withdrawn.

Status of Claims

Claims 11-20 in the previous office action has been cancelled. Claims 1-10 are currently pending.

Claim Objections

1. Claim 3 is objected to because of the following informalities:

2. underlfoor should be changed to overflow in claim 3.

3. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katta et al., US-6,115,421.

Regarding claim 1, Katta teaches An apparatus for coding a moving image, comprising: a coding unit (fig. 13 element 20) configured to generate a code of each frame of the moving image (column 11 line 50-53); a first verification unit configured to calculate a first code quantity predicted to be stored in occupancy of a buffer of a virtual decoding apparatus if the code were to be supplied to the buffer in a virtual decoding apparatus by a first bit rate (S20 and column 12 line 12-17)); a second verification unit configured to calculate a second code quantity predicted to occupancy of the buffer and a change rate of the second code quantity occupancy if the code were to be supplied to the buffer in the virtual decoding apparatus by a second bit rate lower than the first bit rate (column 12 line 55-67, and fig. 13, fig. 15a, elements S26); and a control unit configured to change a coding bit rate of said coding unit based on the first code quantity occupancy, the second code quantity occupancy, and the change rate (column 4 line 55-67).

Regarding claim 2, Katta teaches the apparatus according to claim 1, wherein said control unit controls said coding unit not to code all or a part of one frame if the first code quantity occupancy satisfies a predetermined condition (fig.14 element picture skip; fig. 15a element S27 and column 14 line 30-34).

Regarding claim 3, Katta teaches the apparatus according to claim 2, wherein the predetermined condition is that a possibility of underflow of the buffer is high based on the first code quantity occupancy, and wherein the one frame is a next frame to the present frame from which the code is generated (fig. 15a element S26 and column 12 line 60-64).

Regarding claim 4, Katta teaches the apparatus according to claim 1, wherein the first bit rate is the highest value of input bit rate to the buffer of the virtual decoding apparatus (column 13 line 21-25. Since Katta discloses the degree of change is set so that the number of generated bits may reach the lower limits in several pictures, it is clear to the examiner that Katta teaches the first bit rate is higher, which reads upon the claimed limitation).

Regarding claim 6, Katta teaches the apparatus according to claim 1, wherein said coding unit executes compression coding with quantization (fig. 13 element 22).

Regarding claim 7, Katta teaches The apparatus according to claim 6, wherein said control unit calculates a code quantity to be assigned to one or a plurality of frames based on the second code quantity occupancy (column 12 line 2-10 and fig. 14 element 223, control unit) and the change rate, determines an upper limit and a lower limit of a quantization scale as a parameter of a coding level based on the first code quantity

occupancy, the second code quantity occupancy and the change rate, and changes the quantization scale of said coding unit based on the code quantity, the upper limit and the lower limit (column 4 line 51-57, column 14 line 25-30 and fig. 16).

Regarding **claim 8**, Katta teaches the apparatus according to claim 7, wherein said control unit corrects the upper limit upward if the first code quantity occupancy is below a first threshold, calculates an evaluation value based on the second code quantity occupancy and the change rate, corrects the upper limit based on the evaluation value if the evaluation value is below a second threshold, and corrects the lower limit based on the evaluation value if the evaluation value is above a third threshold (Katta FIG. 16 is a flowchart for explaining the operation for setting q.sub.-- scale to be used in a subsequent picture when the number of bits generated per picture is below the lower limit D0. Usually, q.sub.-- scale is decremented by one, but if PIC.sub.-- CNT is significantly smaller than the lower limit, for example, if less than 1/2 of the lower limit D0, the decreasing width is varied depending on q.sub.-- scale at that time. Generally, in the encoding process in a certain picture, the product of the q.sub.-- scale value and number of generated bits, that is, complexity, is said to be almost constant. That is, when q.sub.-- scale is half, the number of generated bits is doubled. When a relatively large value is assigned for q.sub.-- scale, to control the number of generated bits by varying the value, it is understood that the degree of change must be large as compared with the case of a smaller q.sub.-- scale value, column 13 line 2-15 and fig. 16). Therefore, it is clear to the examiner that Katta teaches to adjust the quantization scale with respect to a threshold, which reads upon the claimed limitation.

Regarding claims 9-10, Katta does not explicitly teach the apparatus according to claim 7, wherein said control unit changes the quantization scale so that the second code quantity occupancy is above the lower limit of the second code quantity occupancy. However, Katta teaches step S26, it is judged if VBV.sub.-- Buffer.sub.-- fullness is below the lower limit D2 of the buffer fullness of the reproducing side decoder or not, and if below the lower limit D2, a picture skip processing signal is issued at step S27 to avoid underflow (column 12 line 60-64 and fig. 15a-15b). since Katta teaches to use a VBV for calculating the quantization scale, it is clear to the examiner that when using a VBV for over and underflow, clearly there is a threshold or limit associated with the VBV, which reads upon the claimed limitation.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katta et al., US-6,115,421 in view of Kawashima et al., US- JP 2003-092759.

Regarding claim 5, Katta is silent in regards to the apparatus according to claim 1, wherein the second bit rate is a target value of average bit rate of the code generated from said coding unit.

However, Kawashima teaches wherein the second bit rate is a target value of average bit rate of the code generated from said coding unit ([0026]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of with Katta for improving quality of the appearance of video and which was stabilized smoothly being reproduced [0009].

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621
/Jessica Roberts/
Examiner, Art Unit 2621